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ABSTRACT

The activities of the International Radio Consultative Committee (CCIR), the radio-communications arm of the International Telecommunications Union (ITU), serve the goal of standardizing practices and techniques useful in the broad field of telecommunications. In between the plenary meetings held every three years, the work of the committee is carried out by study groups. The July, 1972 interim meetings of the study groups on sound broadcasting, television and a joint study group (CMTT) are summarized in this report. (RH)

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A REPORT ON THE 1972 INTERIM MEETINGS OF CCIR STUDY GROUPS 10, 11 AND CMTT

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ABSTRACT

From July 5 to July 18, 1972, Interim Meetings of CCIR Study Groups 10, 11 and CMTT were held in Geneva, Switzerland. Since the Study Groups and CMTT are directly concerned with standards applicable to the international exchange of broadcast radio and television programs and since the 1972 Interim Meetings were the first CCIR gatherings where PBS was represented in the United States delegation, this paper will summarize the role of CCIR in the complex arena of international standards and will describe types of decisions discussed at Geneva which will affect the future of broadcasting and, more especially, the technical operations of PBS.

The International Radio Consultative Committee (CCIR) was founded in 1927 and has been, since its inception, the radio-communications arm of the International Telecommunications Union (ITU), an organization whose roots extend into the telegraph era of the mid-nineteenth century. ITU, and hence CCIR, is now a specialized agency of the United Nations, and U.S. representation to CCIR meetings is organized through the Telecommunications Office of the U.S. Department of State. CCIR membership is by nations, and largely follows the membership of the U.N.

In the essence, the CCIR attempts to standardize practices and techniques useful in the broad field of telecommunications. It does this work through Study Groups, of which there are 14. These have responsibility for transmitters, receivers, fixed and mobile service transmission systems, propagation, space systems and radioastronomy, and, of course, broadcasting. So far as broadcasting is concerned, the bulk of the work most important to U.S. broadcasters is channeled through two of the 14 Study Groups, Study Group 10 (Sound Broadcasting) and Study Group 11 (Television). This report will concentrate on the activities of these two study groups.

CCIR works on a three-year cycle. The culmination of this cycle is a Plenary Assembly, wherein the deliberations of the preceding three years are reviewed in final form and approved or disapproved. In the first year following a Plenary, the national preparatory committees of the member nations consider the conclusions of the just completed Plenary and decide what subjects can be studied within their country in order to prepare documentation to submit to the next Plenary. In the United States the broadcast committee is known as the USSG-BC, the United States Study Group for CCIR-Broadcasting, and is chaired by A. Prose Walker. Its membership is drawn from experts in all fields of broadcasting, from audio recording to television networks, and it meets every two or three months during the period between Plenary Sessions.

During the three years following a Plenary Session most study groups hold one or two international Interim Meetings. In the case of broadcasting, Study Groups 10 and 11 met together in Geneva in July 1972. The Interim Meetings prepare provisional drafts of documents to be submitted to the Plenary Session for approval. In practice, about half of the documentation for a Plenary is prepared at the first Interim Meeting and the remainder is prepared during the second Interim Meeting just preceding the Plenary Assembly itself. An Interim Meeting

usually lasts about two weeks. Following both Interim Meetings and the Plenary Session all documentation approved is published at the CCIR headquarters in Geneva and made available by them to the national preparatory committees. This publishing effort is a large achievement: it is estimated that the Geneva 1972, documentation will amount to some 400 pages of conclusions. This figure can be multiplied by a number of somewhere between five and ten to arrive at the number of pages of preliminary documents, non-approved documents, etc.

The United States generates standards of its own, e.g., FCC transmission standards, NAB tape and phonograph disc standards, SMPTE film and video tape standards, IEEE standards on signal measurement and terminology, USASI standards dealing with many matters, and EIA standards on television equipment. Why, then, do we need CCIR?

If we work at a network facility that receives, almost daily, films and video tapes made abroad, if we work at an FM station that receives audio tapes recorded to CCIR standards and mounted on European hubs, if we are engaged in the planning of a satellite communications system that will involve most of the countries of the world, then we do need CCIR. CCIR

provides the only worldwide forum for the exchange of technical information and informed opinion in the area of radio telecommunications in its broadest sense. There are, also, what amount to international trade associations, similar to our EIA, such as ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission), but these groups deal, in general, with specific portions of complex systems and with equipment. For example, IEC may standardize video tape recorder hardware and audio tape characteristics, and ISO may standardize the dimensions of photographic motion picture film. CCIR works from the point of view of integrating these isolated standardization efforts into complete communications systems. As an example, CCIR will concern itself not only with the dimensions of films intended for television use, but also with the characteristics of the images recorded on the film and with the characteristics of the television camera system that will reproduce the film. It is important, then, for the broadcasting organizations in the United States to be well informed of the current CCIR standards, for much of the rest of the world looks first of all to CCIR for leadership and guidance in the area of telecommunications

Through the efforts of Study Groups, four different types of documents are prduced and referred tc the Plenary Sessions for approval:

(1) Recommendations: These are international voluntary standards that represent agreement by the countries constituting CCIR that certain procedures are the best.

(2) Questions: These are areas of concern where insufficient information is available to permit a recommendation to be drafted. The questions form the work-emphasis for the three years between Plenary Sessions.

(3) Reports: These are summaries of work in progress, and may contain considerable important information. However, a Report is written when there is not enough information or experience to permit a Recommendation to be drafted. Ultimately, most Reports are superseded by Recommendations.

(4) Study Programs: All Study Programs derive from Questions, and may be considered to be a listing of specific work that must be completed before a Question can be answered.

All of these documents are published in one volume, available from the ITU, Geneva or the UN Bookstore, New York City.

Having outlined the organization and scope of CCIR, it might be useful to indicate some particulars of the 1972 Interim Meetings. During July, in Geneva, 132 delegates attended the meetings of Study Group 10, whose international Chairman is

A. Prose Walker of the US. Of these, 18 were US delegates. Study Group 11 work was accomplished by 162 delegates. The acting chairman of the 1972 meetings of Study Group 11 was Prof. M. Krivocheev, of the USSR. Twenty-five US delegates worked in the deliberations of Study Group 11. CMTT, the joint study group combining the interests of CCIR and CCITT, and thus drawing together broadcasting experts and transmission circuit experts, drew 125 delegates with 10 being from the US. PBS was represented in Geneva by F.M. Remley, working in Study Groups 10 and 11, and John Ball, who worked in Study Group 11 and CMTT.

Because of the short span of time allocated to the Interim Meetings, and because of the large volume of documents which are considered at such meetings (160 by SG 10,220 by SG 11 and 135 by CMTT in 1972) the pace of work at Interim Meetings is very hectic. Many sessions are conducted simultaneously during the limited working hours and usually too few rooms are available to permit each group or subcommittee to meet as often as it wishes. Inevitably, shortages of language interpreters are encountered, along with delays in the reproduction of new documents by the Secretariat. In fact, the volume of documentation has grown to such an extent that it is unlikely that CCIT could function at this time if it were not possible for

delegates to make hand-written versions of draft documents and to make their own photocopies for discussion purposes, while the Secretariat is completing typing on formal drafts. All in all, CCIR meetings are not vacations for the delegates. It is a tribute to all concerned that so much was accomplished this last July.

As can perhaps be deduced from the comments just made, it is virtually impossible for a single delegate to completely absorb everything that transpires at a large international meeting such as a CCIR Interim Meeting. Study Groups are broken down into Working Groups; Working Groups are further divided into Subgroups. As a result, it is not possible for a delegate to attend all meetings in which he may be interested; delegation meetings are the only opportunities for each delegate to hear brief reports on the happenings in parts of the organization in which he is not directly involved. Such delegation meetings are, in themselves, rather large gatherings and cover a very large range of subject matter. However, in spite of all this, the July meetings were successful and the output was valuable.

My own work was confined primarily to the establishment and operation of a new joint working group dealing with audio and video recording and measurements of audio and video recording

parameters. At all CCIR meetings prior to 1972, audio and video recording standards were the sole responsibility of Study Group 10. However, in a partial reorganization of CCIR undertaken during the last two years, it was decided that recording matters should be a joint responsibility of both Study Group 10 and Study Group 11. The Geneva meeting of last July was the first opportunity to put this new scheme into operation. As fate would have it, I was chosen by the Study Groups to chair the newly formed Joint Working Group 10/11A. This decision did not come as a complete surprise, but did generate a great deal of organizational work. As the Joint Working Group finally was organized, four Working Parties were established to deal with the subject matter contained in 32 documents referred to the Joint Working Group. One working party dealt with audio recording, another with video tape recording, the third with film for television and another with audio frequency measurements. I appointed a chairman for each working party and the work began to move forward within a day or so of the opening of the Interim Meeting.

Much of the work of this particular Interim Meeting was concerned with the refinement of existing CCIR documentation. For example, significant contributions were presented in the areas of stereophonic sound broadcasting and sound recording. These

suggestions are now under study by all administrations for further discussion at the next Interim Meeting. The area of video tape recording also involved much work in refining the contents of the existing CCIR recommendation on this subject. Good progress was made in video tape; for example, new information concerning editing codes was considered for the first time in CCIR, based on the work done by the SMPTE Video Tape Recording Committee in devising the SMPTE editing code, and by EBU in adapting the SMPTE code to 625 line television systems.

Similar concentrated work was done on the existing CCIR recommendation on films for international television program exchange. The present CCIR recommendation is a result of 6 years of prior work and is a good document. The 1972 work in Geneva resulted in proposals to incorporate new information on film color balance and on optical viewing conditions, both subjects being based upon work carried out simultaneously in Europe by EBU and in the US by SMPTE. More work remains to be done concerning the evaluation of color films and is proceeding in the US within the SMPTE Television Committee.

Other areas of concern, worked upon in Geneva by Study Group 10, included satellite sound broadcasting, single-sideband AM transmission, two sound channels in television, and additional

FM sound and information programs (SCA system, for example).

Study Group 11 considered contributions including color television primary specifications (involving the chromaticity coordinates of the three primaries used in color television systems), definition of television system gamma, high definition television, vertical interval test signals (with CMTT), digital television, assessment of TV picture quality, TV vestigial sideband distortion, TV receivers and receiving antennas, cable TV and protection ratios for Television allocations. Considerable discussion of satellite television standards also was conducted.

CMTT dealt with matters of TV transmission standards through long distance transmission circuits, measurement and monitoring of TV transmission circuits, combined transmission of TV video and audio signals over long transmission circuits, sound program transmission circuits, and digital transmission of sound and TV signals. Vertical interval test signals were discussed jointly by Study Group 11 and CMTT. Video noise weighting networks were also considered.

John Ball, of the PBS engineering staff, worked primarily in the areas of satellite circuit problems and of vertical interval

test signals. He may wish to make comments on these aspects of the work of CCIR in a moment.

In a summary, I have tried in this brief report to give a general overview of the work of CCIR. It is not possible to go into each subject dealt with by CCIR in the time available, but rather only to list the more significant areas of work. For anyone interested in specific problems upon which CCIR is working, I would suggest that he consider the possibility of joining in the work of the US Study Group for CCIR, whose chairman is A. Prose Walker, of the FCC. It is certainly true that the US delegation to the Geneva meeting was too small to cover all of the areas noted above in a fully thorough fashion. From my own viewpoint, the areas of video tape recording and film recording were underrepresented in the US delegation, since I was the only US delegate at most of the working group meetings dealing with these subjects and the responsibilities that I had as chairman of Joint Working Group 10/11A precluded as active a representation as would be desirable.

To conclude, I would like to thank Dan Wells and PBS for making my participation in the 1972 Interim meetings of CCIR possible and to also thank the members of the PBS Engineering Committee, whose expertise and advice on the various matters of concern to PBS are so useful in CCIR deliberations.